

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

- 1        1. (Currently amended) An apparatus for detecting errors on a source-  
2        synchronous bus, comprising:  
3              the source-synchronous bus, wherein the source-synchronous bus includes  
4              a plurality of data lines and a clock line;  
5              a transmitting mechanism coupled to the source-synchronous bus, wherein  
6              the transmitting mechanism is configured to transmit data on the source-  
7              synchronous bus;  
8              a receiving mechanism coupled to the source-synchronous bus, wherein  
9              the receiving mechanism is configured to receive data from the source-  
10             synchronous bus;  
11             an error detecting mechanism coupled to the receiving mechanism that is  
12             configured to detect errors on the source-synchronous bus;  
13             a grouping mechanism coupled to the transmitting mechanism that is  
14             configured to group data bits into an error group, wherein the grouping  
15             mechanism is further configured to skew data bits within the error group across  
16             time;  
17             a detection code generating mechanism coupled to the grouping  
18             mechanism that is configured to generate a detection code for the error group; and  
19             the transmitting mechanism that is further configured to transmit the  
20             detection code on the source-synchronous bus using a clock cycle other than the  
21             clock cycles used for transmitting data bits of the error group;

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22 wherein each data bit in the error group is transmitted at a different  
23 timestamp so that no two bits associated with the error group are transmitted at the  
24 same time; and

25 wherein the error detecting mechanism can detect errors on the plurality of  
26 data lines including errors that are caused by an error on the clock line.

1 2. (Canceled).

1 3. (Previously presented) The apparatus of claim 1, wherein the detection  
2 code is a parity bit.

1 4. (Previously presented) The apparatus of claim 1, wherein the detection  
2 code is an error correcting code.

1 5. (Canceled).

1 6. (Previously presented) The apparatus of claim 1, wherein skewing data  
2 bits across time includes delaying a data bit based on a position of the data bit  
3 within the error group.

1 7. (Previously presented) The apparatus of claim 1, further comprising a  
2 gathering mechanism coupled to the receiving mechanism, wherein the gathering  
3 mechanism is configured to de-skew data bits within the error group.

1 8. (Currently amended) A method for detecting errors on a source-  
2 synchronous bus, wherein the source-synchronous bus includes a plurality of data  
3 lines and a clock line, the method comprising:  
4 grouping data bits into an error group;

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5           generating a detection code for the error group;  
6           skewing data bits within the error group across time;  
7           generating a detection code for the error group;  
8           transmitting data from a source on the source-synchronous bus, wherein  
9           each data bit in the error group is transmitted at a different time so that no two bits  
10          associated with the error group are transmitted at the same time;  
11          transmitting the detection code on the source-synchronous bus using a  
12          clock cycle other than the clock cycles used for transmitting data bits of the error  
13          group;  
14          receiving data at a destination from the source-synchronous bus; and  
15          detecting data errors at the destination, wherein detecting data errors  
16          includes detecting errors that are caused by errors on the clock line.

1           9. (Canceled).

1           10. (Previously presented) The method of claim 8, wherein the detection  
2          code is a parity bit.

1           11. (Previously presented) The method of claim 8, wherein the detection  
2          code is an error correcting code.

1           12. (Canceled).

1           13. (Previously presented) The method of claim 8, wherein skewing data  
2          bits across time includes delaying a data bit based on a position of the data bit  
3          within the error group.

1           14. (Previously presented) The method of claim 8, further comprising de-  
2 skewing data bits within the error group.

1           15. (Currently amended) A computing system for detecting errors on a  
2 source-synchronous bus, comprising:

3                 the source-synchronous bus, wherein the source-synchronous bus includes  
4 a plurality of data lines and a clock line;

5                 a central processing unit coupled to the source-synchronous bus, wherein  
6 the central processing unit is configured to transmit data on the source-  
7 synchronous bus;

8                 a memory unit coupled to the source-synchronous bus, wherein the  
9 memory unit is configured to receive data from the source-synchronous bus;

10               an error detecting mechanism coupled to the memory unit that is  
11 configured to detect errors on the source-synchronous bus;

12               a grouping mechanism coupled to the transmitting mechanism that is  
13 configured to group data bits into an error group, wherein the grouping  
14 mechanism is further configured to skew data bits within the error group across  
15 time;

16               a detection code generating mechanism coupled to the grouping  
17 mechanism that is configured to generate a detection code for the error group; and

18               the transmitting mechanism that is further configured to transmit the  
19 detection code on the source-synchronous bus using a clock cycle other than the  
20 clock cycles used for transmitting data bits of the error group, wherein each data  
21 bit in the error group is transmitted at a different time so that no two bits  
22 associated with the error group are transmitted at the same time;;

23               wherein data bits in the error group are transmitted at different times; and

24               wherein the error detecting mechanism can detect errors on the plurality of  
25 data lines including errors that are caused by an error on the clock line.

1           16. (Canceled).

1           17. (Previously presented) The computing system of claim 15, wherein the  
2       detection code is a parity bit.

1           18. (Previously presented) The computing system of claim 15, wherein the  
2       detection code is an error correcting code.

1           19. (Canceled).

1           20. (Previously presented) The computing system of claim 15, wherein  
2       skewing data bits across time includes delaying a data bit based on a position of  
3       the data bit within the error group.

1           21. (Previously presented) The computing system of claim 15, further  
2       comprising a gathering mechanism coupled to the memory unit, wherein the  
3       gathering mechanism is configured to de-skew data bits within the error group.

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